

CLAIMS

What is claimed is:

1. A plant comprising:
 - a first filter configured to receive a solvent to form a pre-filtered solvent, and a second filter fluidly coupled to the first filter and configured to receive the pre-filtered solvent from the first filter;
 - a first circuit configured to provide a rinse fluid in a forward flow to the prefilter to thereby displace at least part of the pre-filtered solvent from the first filter to a first receiving tank;
 - a second circuit configured to provide a flush gas in a reverse flow to the prefilter to thereby displace at least a portion of solids from the first filter to a second receiving tank; and
 - wherein at least part of the pre-filtered solvent from the first receiving tank and at least part of the flush gas from the second receiving tank and are recycled to the plant.
2. The plant of claim 1 further comprising a bypass circuit that is configured to route the solvent to the second filter.
3. The plant of claim 2 wherein the bypass circuit that is configured to route the solvent to the second filter when the first filter receives at least one of the rinse fluid and the flush gas.
4. The plant of claim 1 further comprising a differential pressure sensor coupled to the first filter that measures a pressure difference across the first filter.
5. The plant of claim 1 wherein the first filter is configured to withstand differential pressure of at least 25 psi.
6. The plant of claim 1 wherein the first filter comprises an etched filter element or a sintered filter element, and wherein the second filter comprises a cartridge filter.

7. The plant of claim 1 wherein the solvent is selected from the group consisting of monoethanolamine, diethanolamine, diglycolamine, diisopropylamine, triethylene glycol, methyldiethanolamine, an enhanced tertiary amine, propylene carbonate, a polyethylene glycol dialkyl ether, tributyl phosphate, normal methyl pyrrolidone, and a mixture of dimethyl ethers of polyethylene glycols and water.
8. A method of operating a plant, comprising:
removing at least part of a pre-filtered solvent from a first filter using a rinse fluid in forward flow;
removing particulates from the first filter using a flush gas in reverse flow; and
recycling at least part of the pre-filtered solvent and the flush gas to the plant after the pre-filtered solvent and the flush gas are removed from the first filter.
9. The method of claim 8 further comprising a step of filtering at least one of the solvent and the pre-filtered solvent in a second filter.
10. The method of claim 9 wherein the solvent is provided to the second filter via a bypass circuit, and wherein the solvent is filtered in the second filter when at least one of the pre-filtered solvent and the particulates are removed from the first filter.
11. The method of claim 8 further comprising a step of measuring a pressure difference across the first filter, and initiating the step of removing at least part of a pre-filtered solvent in response to a predetermined pressure differential.
12. The method of claim 8 wherein the rinse fluid comprises water.
13. The method of claim 8 wherein the flush gas comprises nitrogen and wherein the flush gas is provided by a surge drum.
14. The method of claim 13 wherein the step of recycling the flush gas comprises a step of collecting the flush gas in a low pressure tank, compressing at least part of the flush gas from the low pressure tank, and storing the compressed flush gas in a surge drum.